EMC Test Results for WNR-STD Columbus Wheel Nutrunner

1. **Machine Information**
   • Machine Name: WNR-STD Columbus Wheel Nutrunner
   • Manufacturer: Columbusmaskiner AB
   • Tested Product Description: Wheel Nut Wrench for Heavy Trucks

2. **EMC Test Report**

2.1 **General Information about the Tests**
• Test Date: 2024-12-18
• Test Time Interval: 12:05:40 - 12:06:00
• Test Leader: Jari Palosaari
• Responsible for Machine's CE Marking: Alexander Österström
• Test Type: Electromagnetic Compatibility (EMC)
• Test Setup: The test equipment (Combinova FD 10) was placed on a stand approximately 20 cm from the machine during the test.
• Test Duration: The test was conducted for approximately 1 minute to measure the average electromagnetic fields.
• Measurement Range: Frequency range 10 Hz - 400 kHz
• Standards Applied:
o EN 61000-6-2 (Immunity)
o EN 61000-6-4 (Emission Requirements)

2.2 **Test Equipment and Methodology**
• Measurement Equipment Used: Combinova FD 10
• Test Method:
o Frequency Range: 10 Hz - 400 kHz
o Measurement Speed: 1
o Measurement Mode: B
o Gain: 1
o Test Duration: Approximately 1 minute
o Average Field Measurements: The measurement includes average values for the electromagnetic fields within the specified frequency range.

2.3 **Test Results**

Order No.	Status	Peak Value (µT)	X (µT)	Y (µT)	Z (µT)	RMS (µT)	X (µT) RMS	Y (µT) RMS	Z (µT) RMS	Frequency (Hz)
1	Range change	2.7162	2.1699	1.5514	1.2089	1.4204	0.9831	0.8550	0.5656	0
2	OK	3.2211	1.9638	3.1757	1.1336	1.3715	0.8602	0.9348	0.5171	0
3	OK	2.6760	2.0758	2.5372	1.1062	1.2554	0.7120	0.9292	0.4534	0
4	OK	2.5100	1.8990	2.4673	1.1516	1.3623	0.8162	0.9757	0.4877	0
5	OK	3.3767	2.1216	3.1450	1.3123	1.3950	0.8457	0.9797	0.5206	0
6	OK	2.5780	1.9866	1.6734	1.1548	1.3165	0.8675	0.8542	0.5007	48
7	OK	5.5688	5.2519	1.9019	1.4976	2.0307	1.7911	0.7292	0.6198	0
8	OK	3.4451	3.2742	1.3890	1.3821	2.0322	1.7812	0.7149	0.6677	0
9	OK	3.8616	3.6552	2.4992	1.6856	2.0719	1.7776	0.8325	0.6633	0
10	OK	3.6056	3.4077	2.4328	1.4489	1.9676	1.7023	0.7316	0.6622	0
11	OK	3.6934	3.5434	1.3453	1.5062	2.1912	1.9313	0.7430	0.7208	50
12	OK	4.3340	3.8367	2.6085	1.4485	1.3042	0.9111	0.7915	0.4943	39
13	OK	2.7403	2.0712	2.1098	1.2345	1.4239	0.9080	0.9361	0.5716	0
14	OK	3.8348	1.9344	3.7238	1.2913	1.5470	0.7443	1.2686	0.4795	0
15	OK	2.9872	1.9855	2.8869	1.1876	1.3927	0.7541	1.0642	0.4881	0
16	OK	2.8732	2.2651	2.5982	1.3000	1.2715	0.8066	0.8547	0.4854	42
17	OK	6.2544	4.6938	4.4333	1.6365	2.3215	2.0163	0.9002	0.7165	50
18	OK	3.5225	3.3559	1.4177	1.4171	2.0339	1.7802	0.7199	0.6703	0
19	OK	4.0694	3.9261	2.3330	1.5835	2.0921	1.7979	0.8897	0.5941	0
20	OK	3.6368	3.4771	1.3895	1.4484	1.9616	1.7132	0.6812	0.6699	0

Measurement Uncertainty: The measurement uncertainty for the recorded electromagnetic fields is estimated to be ±5%, based on the specifications of the test equipment and standard measurement uncertainty for this type of test.

3. **Conclusion**
   • Test Result: The MD-STD machine has undergone EMC testing within the specified frequency range of 10 Hz to 400 kHz, and the results have been documented according to the standard.
   • Approval: The machine meets the electromagnetic compatibility requirements according to the applicable standards.

4. **Approval**
   • Test Leader (Name, Title): Jari Palosaari, Test Leader
   Date: 2024-12-20
   • Responsible for the Machine's CE Marking: Alexander Österström, Technical Manager
   Date: 2024-12-20

Columbusmaskiner AB
Hejargatan 13
632 29 Eskilstuna
Sweden
Email: info@columbusmaskiner.se
Phone: +46-724 544 244